

FIG. 1

Cow	: SQAE	FDKA	EEV	KH	KTK	---	P	---	ADDE	MF	YSH	KOAT	VG	DIN	-	TER	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>86</sup>		
Man	: SQAE	FEKA	EEV	PH	KTK	---	P	---	SDEE	MF	YGH	KOAT	VG	DIN	-	TER	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>87</sup>		
Pig	: SQAE	FEKA	EEV	KN	KTK	---	P	---	ADDE	MF	YSH	KOAT	VG	DIN	-	TER	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>86</sup>		
Dog	: SQAE	FDKA	EEV	GH	KTK	---	P	---	ADDE	MF	YSH	KOAT	VG	DIN	-	TER	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>86</sup>		
Rat	: SQAE	FDKA	EEV	KR	KTK	---	P	---	TDEE	MF	YSH	KOAT	VG	DIN	-	TER	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>86</sup>		
Mouse	: SQAE	FDKA	EEV	KR	KTK	---	P	---	TDEE	MF	YSH	KOAT	VG	DIN	-	TER	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>86</sup>		
Turtle	: SQAE	FDKA	EEV	KQ	KSQ	---	P	---	TDEE	MF	YSH	KOAT	VG	DIN	-	TER	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>87</sup>		
Duck	: SQAE	FDKA	EEV	KQ	KSQ	---	P	---	TDEE	MF	YSH	KOAT	VG	DIN	-	TER	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>86</sup>		
Chicken	: AEA	FQKA	EEV	KQ	KSQ	---	P	---	SDQE	MD	YSH	KOAT	VG	DIN	-	TER	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>86</sup>		
Fruitfly	: SEAE	FQKA	EEV	KH	KSQ	---	P	---	TDQE	MD	YSH	KOAT	VG	DIN	-	TER	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>86</sup>		
Hawkmoth	: VSEQ	ENAA	EEV	KS	TKR	---	P	---	SDDE	FO	YAL	KOAS	VG	DND	-	TAK	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>86</sup>		
Yeast (1)	: LOEQ	DOAA	EEV	NR	KSL	---	P	---	SDND	LE	YAL	KOAS	VG	DND	-	KEK	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>86</sup>		
Yeast (2)	: VSQ	LEEK	AAV	NE	PTK	---	P	---	STDE	LE	YAL	KOAS	VG	DND	-	KEK	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>86</sup>		
C.elegans (1)	: MTL	SE	DDAA	AT	KT	KS	---	P	---	STDE	LE	YAL	KOAS	VG	DND	-	KEK	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>87</sup>	
Cotton	: LKEE	FEH	AAV	KT	PA	---	P	---	SNDD	MI	YGL	KOAT	VG	PVN	-	TSR	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>86</sup>		
Rape seed	: LKEE	FEH	AAV	KT	PA	---	P	---	SNDD	MI	YGL	KOAT	VG	PVN	-	TSR	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>89</sup>		
Arabidopsis	: LKEE	FEH	AAV	KT	PA	---	P	---	SNDD	MI	YGL	KOAT	VG	PVN	-	TSR	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>92</sup>		
Castor bean	: LKEE	FEH	AAV	KT	PA	---	P	---	SNDD	MI	YGL	KOAT	VG	PVN	-	TSR	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>92</sup>		
Lily	: LKEE	FEH	AAV	KT	PA	---	P	---	SNDD	MI	YGL	KOAT	VG	PVN	-	TSR	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>90</sup>		
Frog (brain)	: PQAE	DKA	GD	KK	KTK	---	P	---	TDDE	LE	YGL	KOAT	VG	DIN	-	IE	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>87</sup>		
Duck (brain)	: HOAE	DEA	EEV	KK	KTR	---	P	---	TDDE	LE	YGL	KOAT	VG	DIN	-	IE	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>88</sup>		
Cow (testis)	: SQVE	FEKA	EEV	AA	KQ	KG	---	P	---	VSDQ	EM	YSV	KOAT	QD	EN	-	IP	PA	TD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>103</sup>	
Rat (testis)	: SQVE	FEKA	EEV	AA	KQ	KG	---	P	---	VSDQ	EM	YSV	KOAT	QD	EN	-	IP	PA	TD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>87</sup>	
Mouse (testis)	: SQVE	FEKA	EEV	AA	KQ	KG	---	P	---	VSDQ	EM	YSV	KOAT	QD	EN	-	IP	PA	TD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>87</sup>	
C.elegans (2)	: AQAE	FEKA	EEV	AA	KQ	KG	---	P	---	VSDQ	EM	YSV	KOAT	QD	EN	-	IP	PA	TD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>87</sup>	
C.elegans (3)	: LOEK	EDAA	VEI	IQ	PKTG	---	P	---	PVAT	SNDQ	KMI	YSL	KOAT	QD	EN	-	TD	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>385</sup>	
C.elegans (4)	: LDEQ	EEAA	VWI	IN	PKNG	---	P	---	PIKT	SINDQ	KMI	YSL	KOAT	QD	EN	-	TD	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>125</sup>	
Carp (m)	: SVEE	ENAA	KEK	IG	KKD	---	P	---	GNEV	KMI	YSL	KOAT	QD	EN	-	TD	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>146</sup>		
Cow (m)	: HETR	EEAA	VKI	IQ	PKNG	---	P	---	TNEM	KMI	YSL	KOAT	QD	EN	-	TD	PC	MD	FKG	KA	KWD	AN	NEL	GT	SKE	DAM	KAN	ED	KVEE	KKYGI	<sup>536</sup>		
Arabidopsis (m)	: SAATA	FVA	AA	ASDR	ESQV	---	P	---	SNELO	Q	YGL	KIAT	EG	POT	-	AP	QS	AT	KI	TAR	KI	Q	AW	QK	LGA	MP	PEE	MEK	Y	ED	ITQ	YPAWVE	<sup>533</sup>

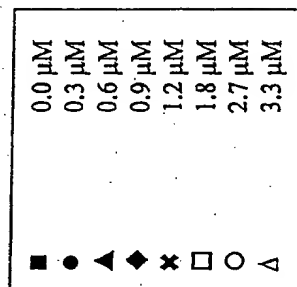
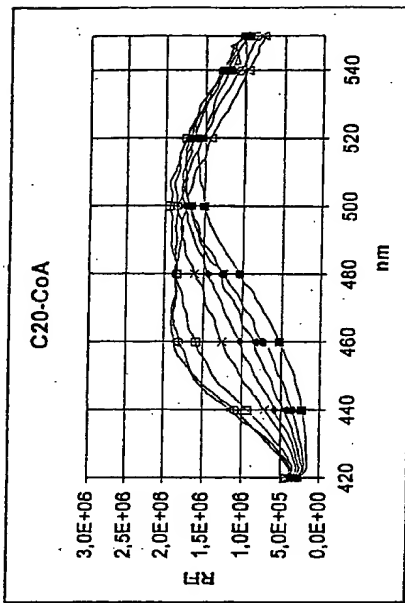
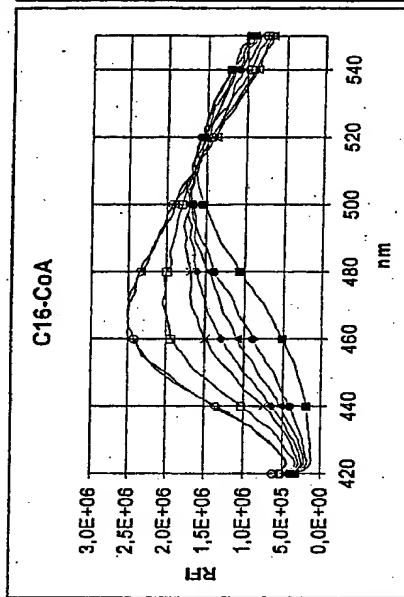
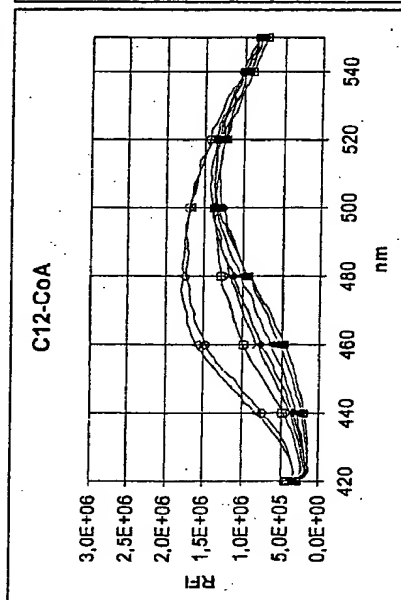
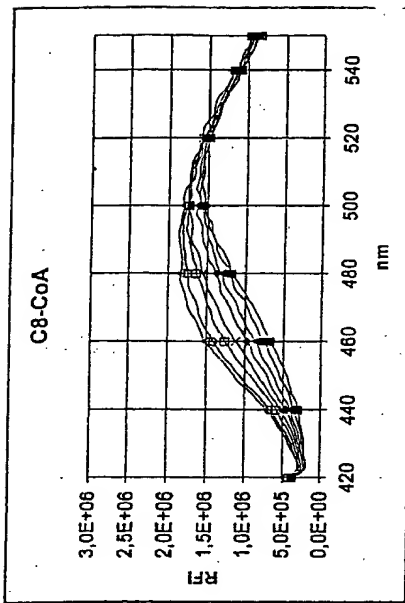
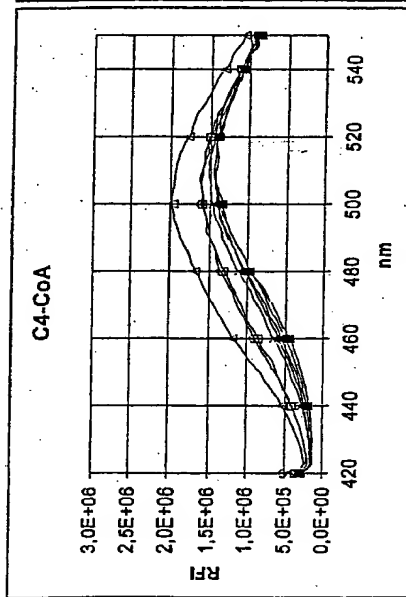
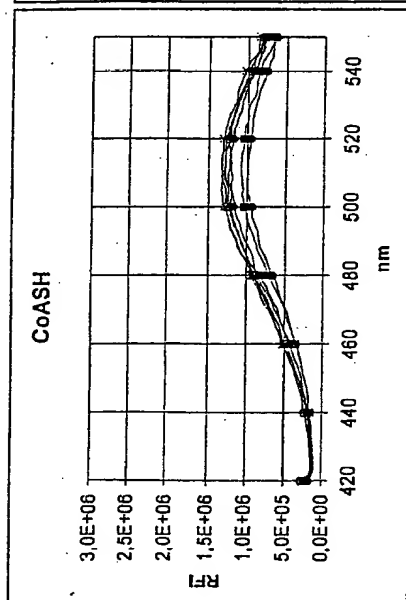


FIG. 3

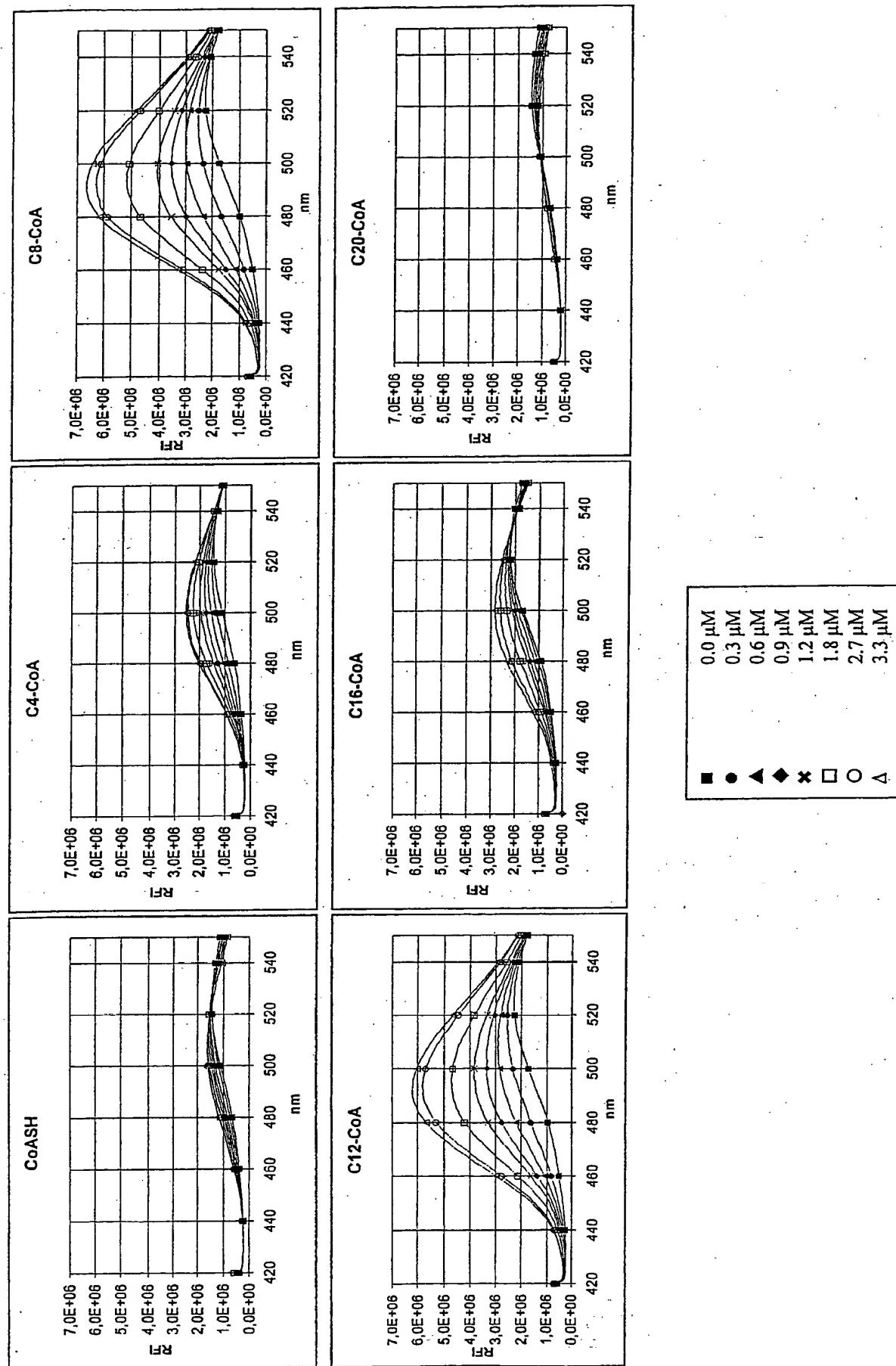
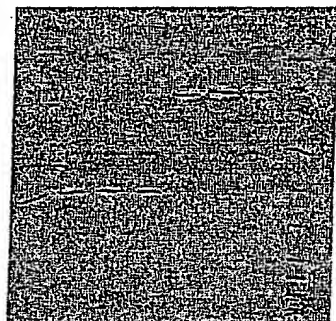
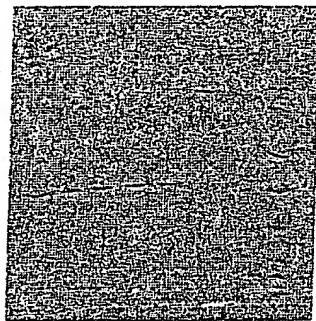


Figure 4:

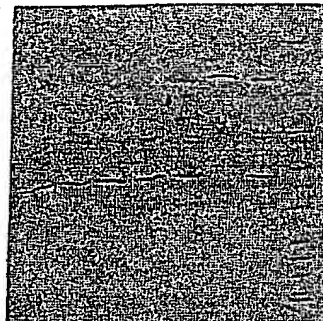
(a): r-bov ACBP



(b): A53C-badan



(c): M24C-badan



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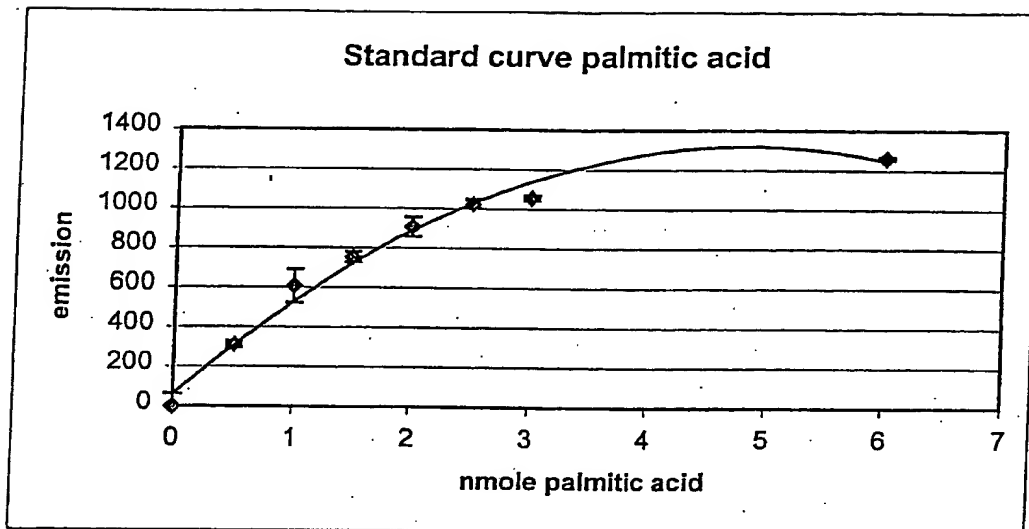


Fig. 5a.

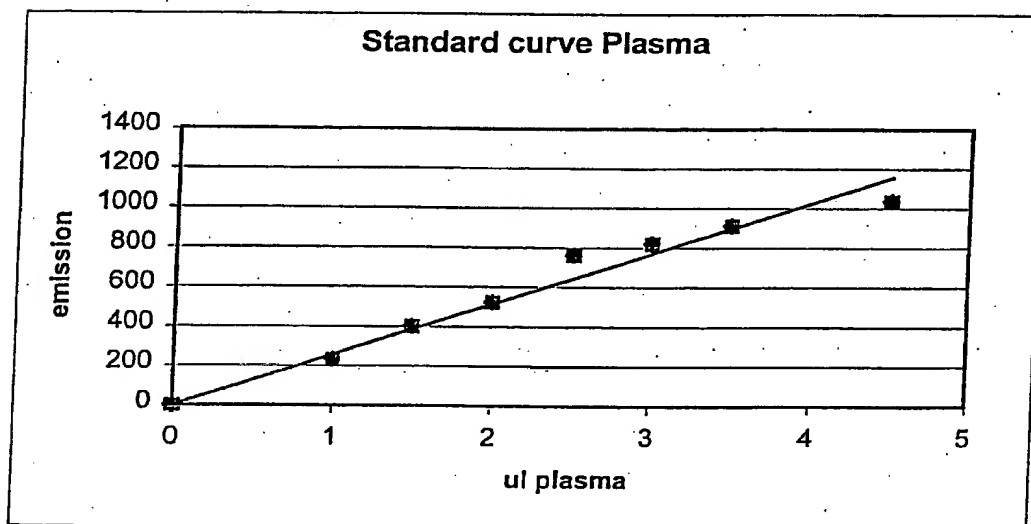
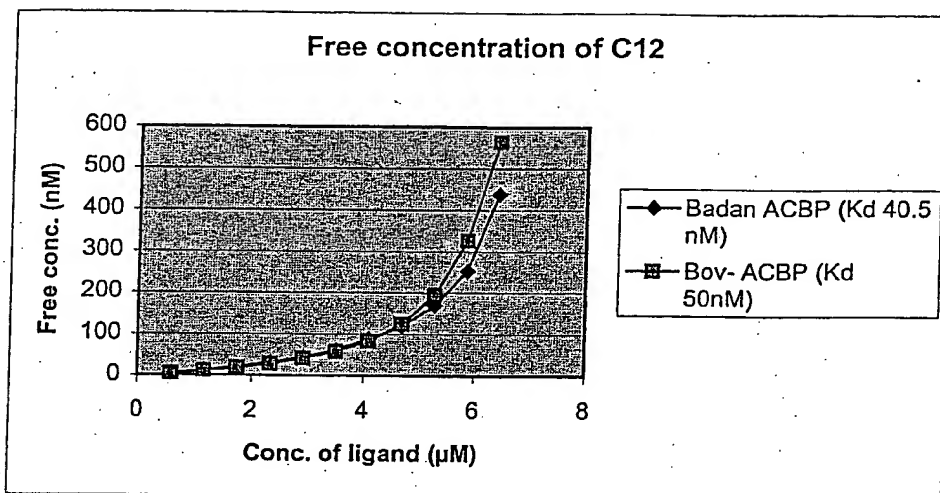


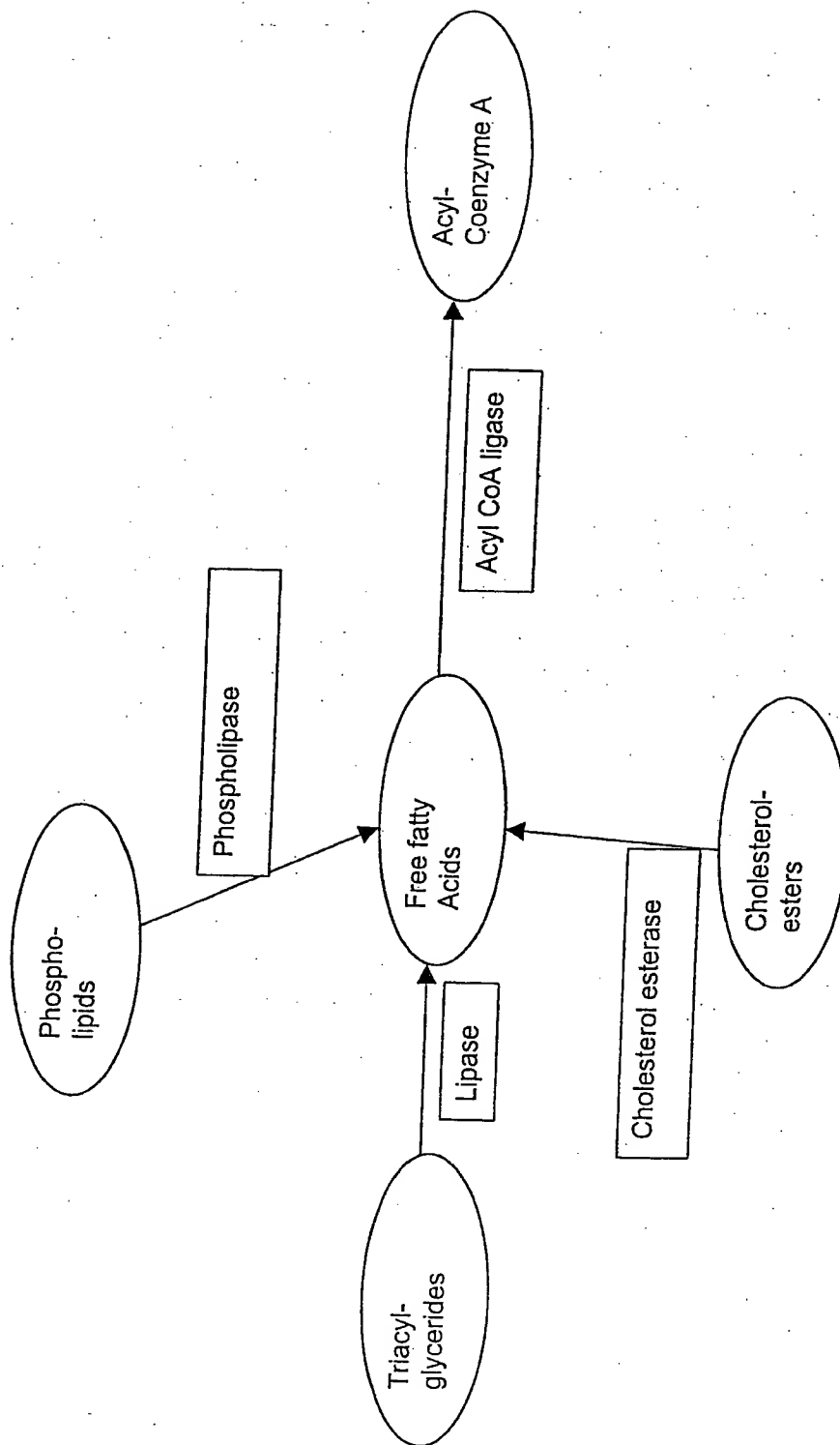
Fig. 5b.

Fig. 6



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FIG. 7



200000-001-0050

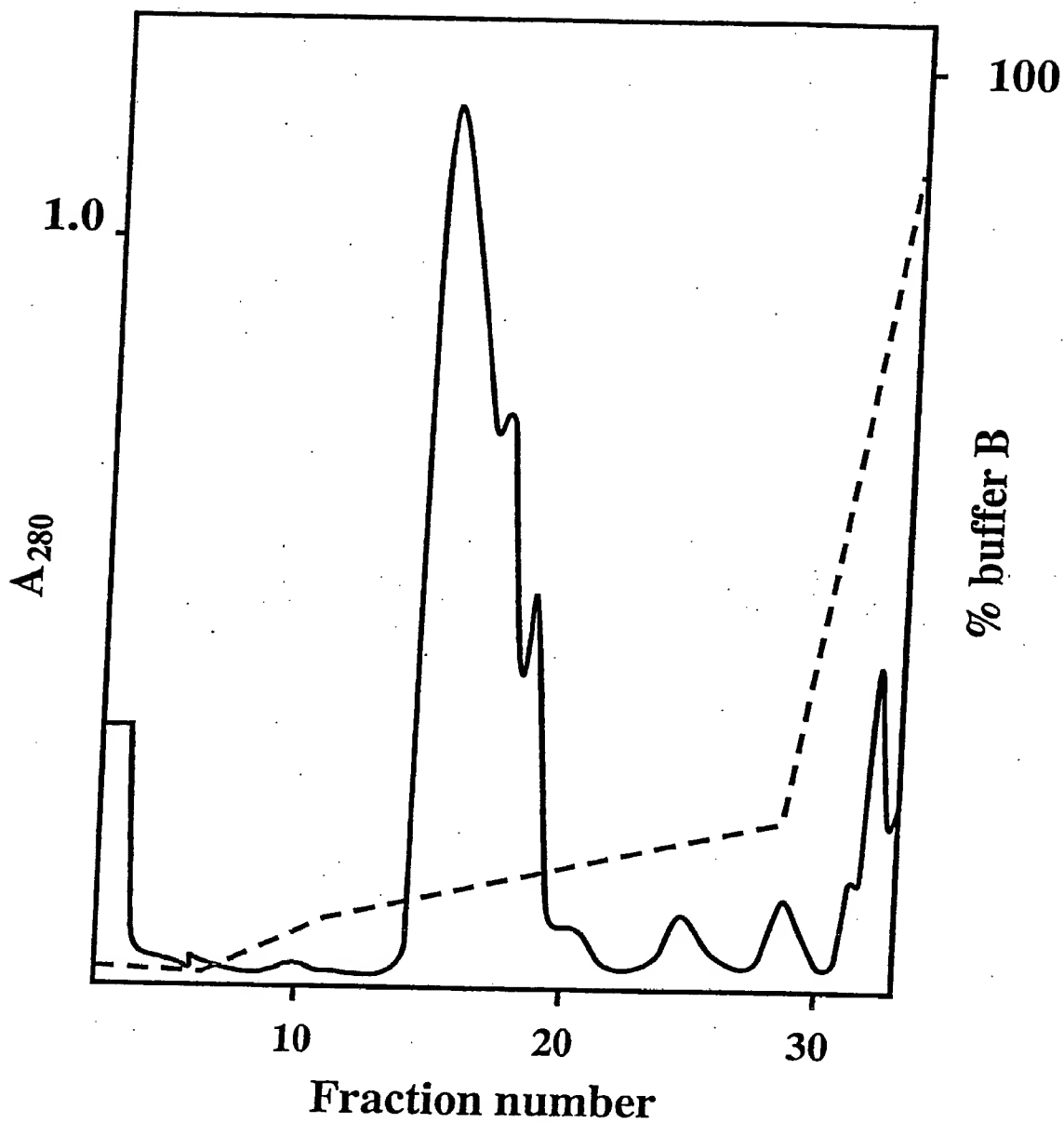


Fig. 8



209020-20148550

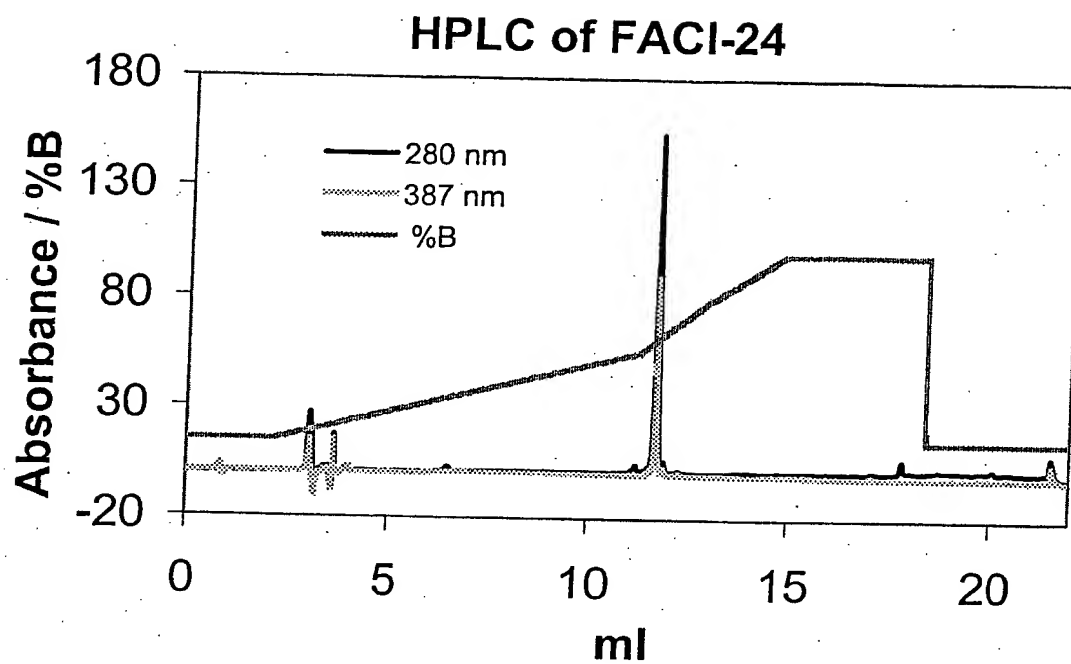


Fig. 9

FACI-24 in response to C16-CoA

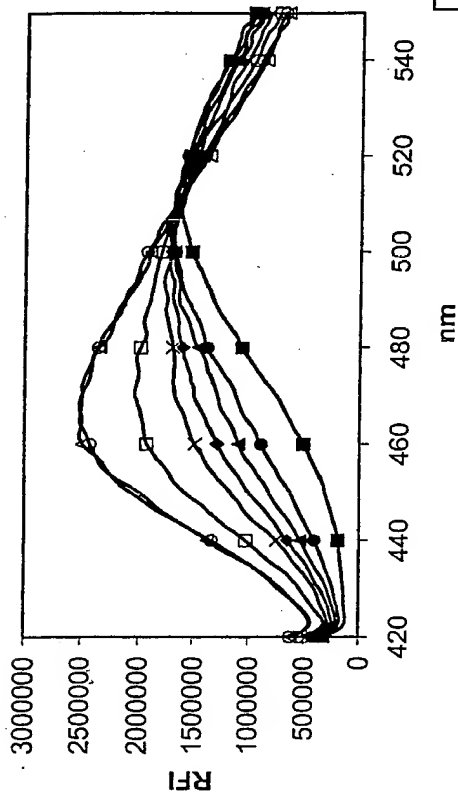


Fig 10 A

FACI-53 in response to C12-CoA

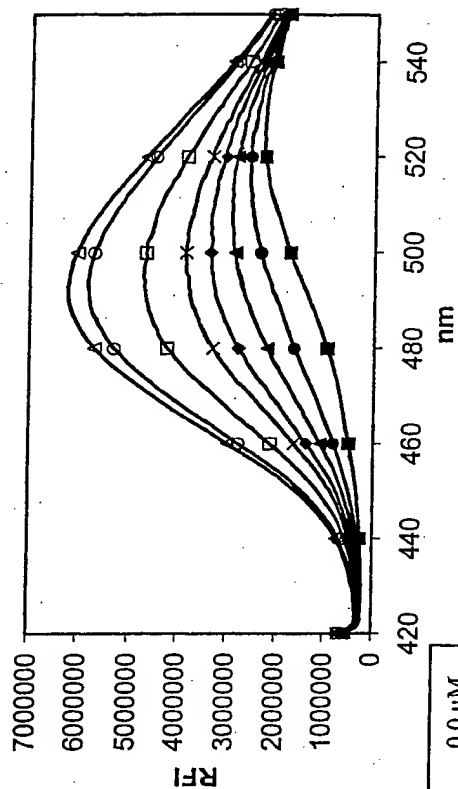
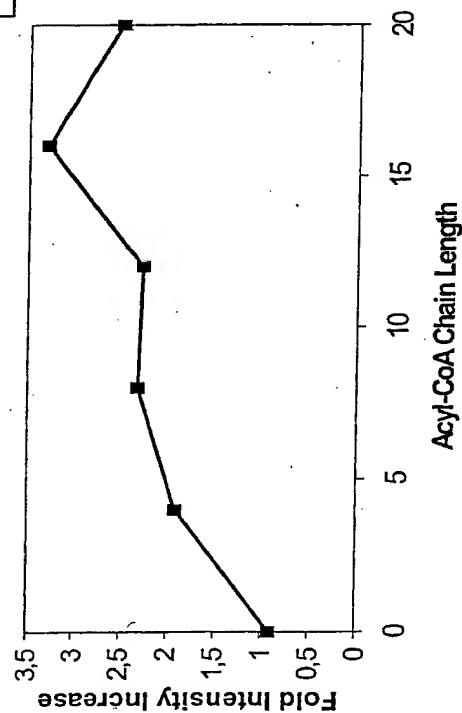


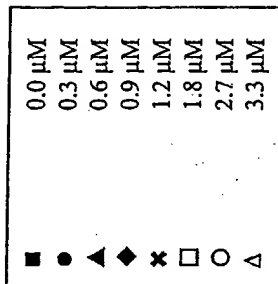
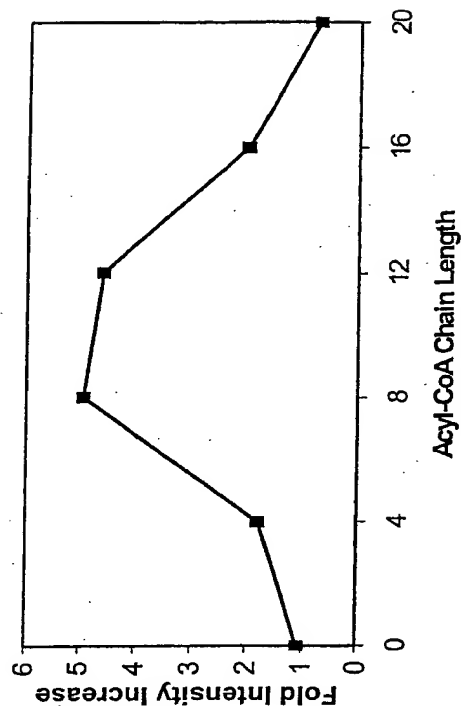
Fig. 10 B

Fig 10 C

M24C-badan response at 470 nm



A53C-badan response at 490 nm



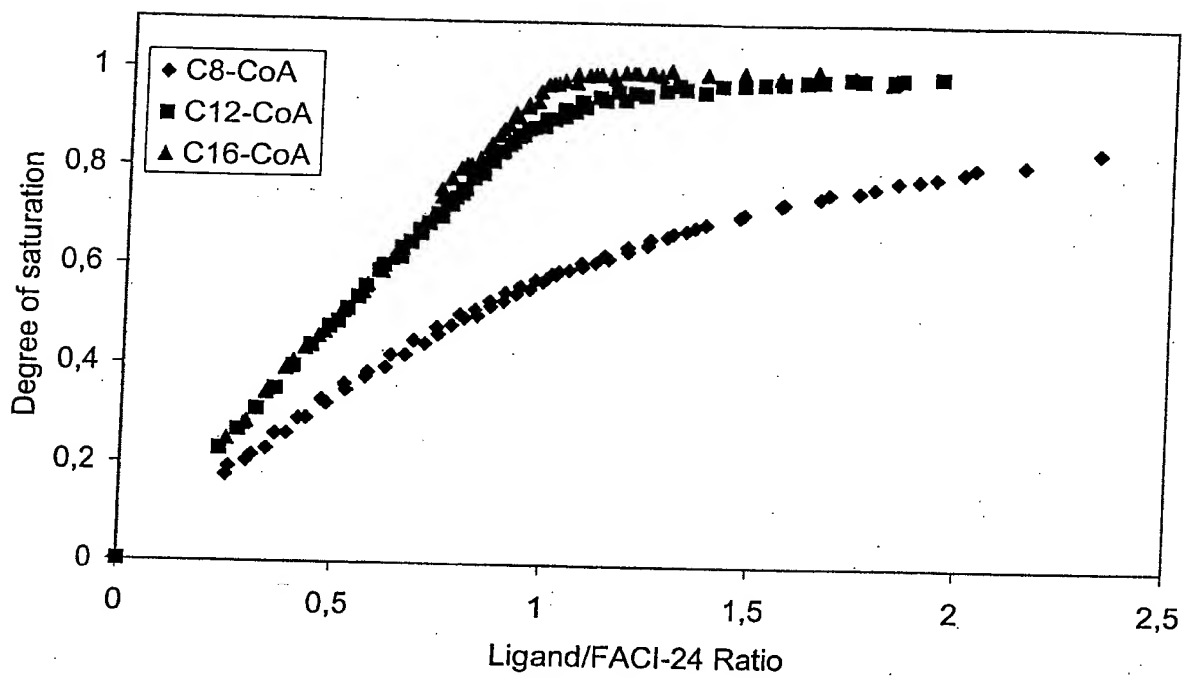


Fig. 11

Fold Fluorescence Increase at 460 nm

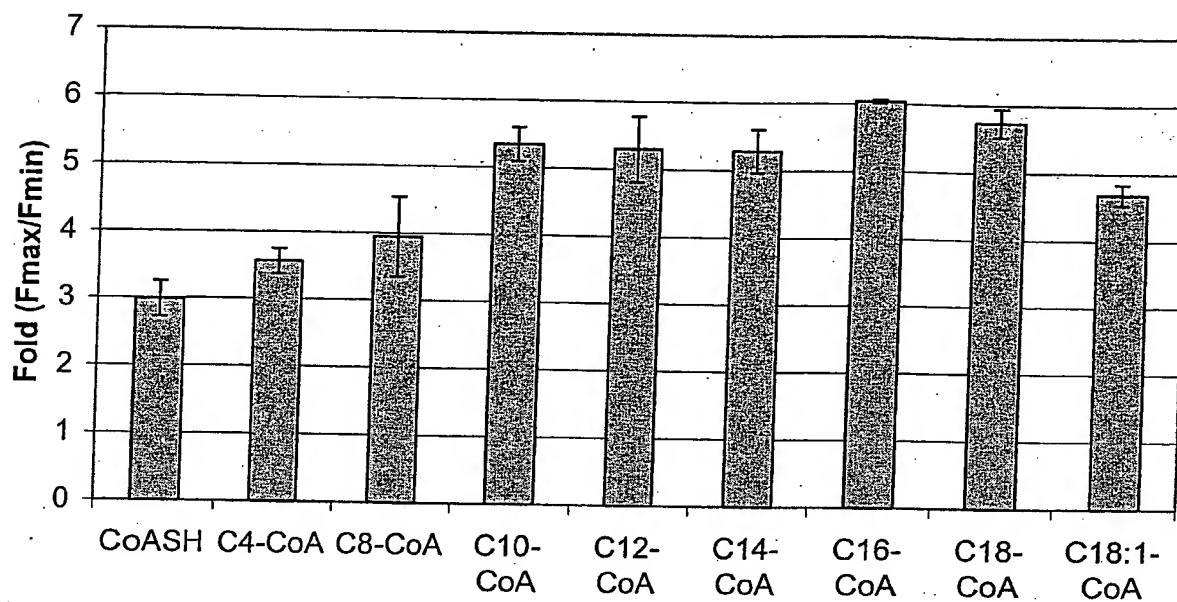


fig. 12

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2099020-901-28560

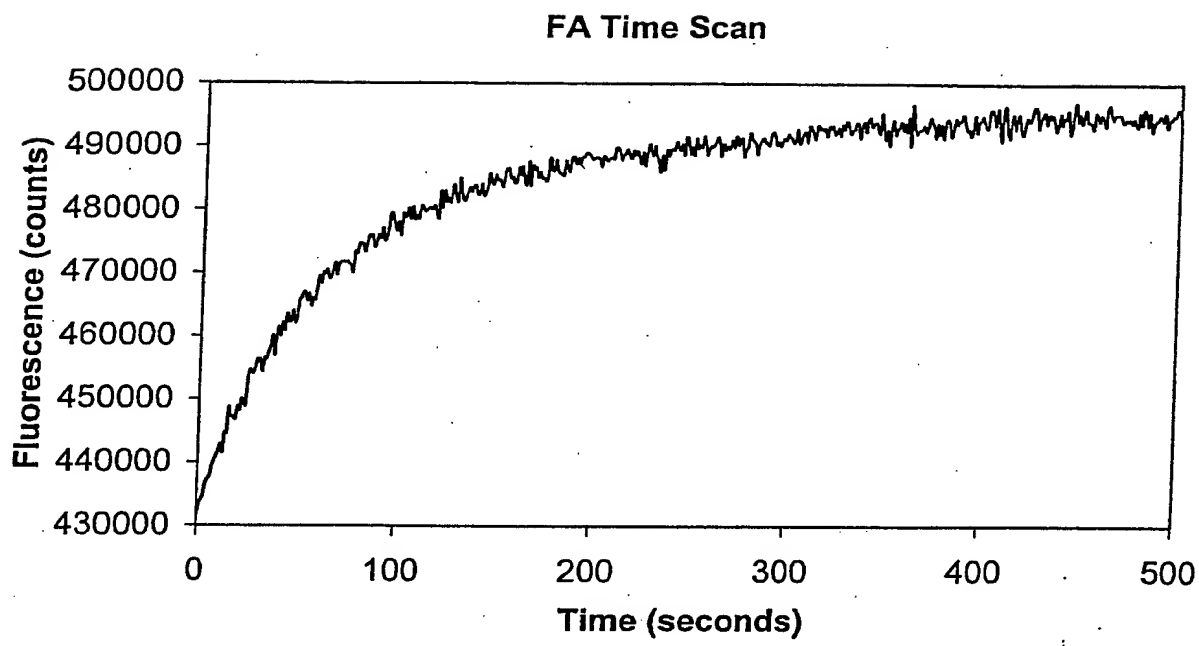


Fig. 13

20090210-201728590

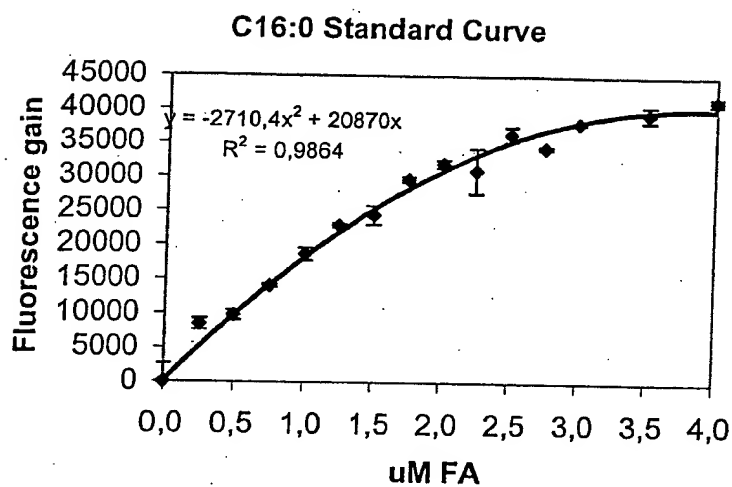


Fig. 14

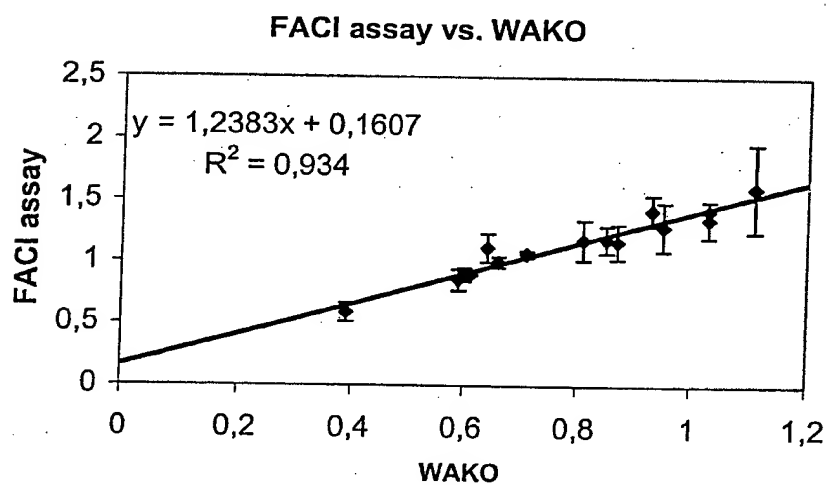


Fig. 15